Two new ambush bugs from Yunnan, southern China (Insecta, Heteroptera, Reduviidae, Phymatinae)[1]

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Abstract: Two new species of ambush bugs are described from the Yunnan province, China. *Carcinocoris yunnanus* nov.sp. belongs to the "*C. castetsi*"-group of species with a rhomboid abdomen and short, unpaired spines on the connexivum. It differs from the similar *C. castetsi* HANDLIRSCH by the shorter scutellum and the reduced number of spines on the connexivum. *Chelocoris heissi* nov.sp. belongs to the group of species without spines between the eyes and differs from all other known species of the genus by the elongate scutellum.

Key words: *Carcinocoris*, *Chelocoris*, China, Heteroptera, new species, Phymatinae, Reduviidae, Yunnan.

Introduction

The genus *Carcinocoris* HANDLIRSCH currently includes six species (FROESCHNER & KORMILEV 1989), distributed from India to South East Asia (KORMILEV 1962). Specimens of the genus are rarely collected and variability of characters remains poorly investigated. *Carcinocoris binghami* (SHARP 1897) is the only representative in the palaearctic region known so far, recorded from the southwestern provinces of China (PUTSHKOV & PUTSHKOV 1996). Within the genus, there are two species groups (the "*C. binghami*"- and "*C. castetsi*"-groups), separated by the shape of their abdomens (elliptical vs. rhomboid) and the length of connexivum spines (longer vs. shorter than the exposed width of the connexivum) (KORMILEV 1962). Among some undetermined Phymatinae in the Natural History Museum, Vienna, two female specimens of the "*C. castetsi*"-group, running to *C. castetsi* HANDLIRSCH in the key of FROESCHNER & KORMILEV (1989), were found to belong to a new species, which is described below.

The genus *Chelocoris* BIANCHI currently includes fifteen species (FROESCHNER & KORMILEV 1989), distributed from the mountainous areas of northern Pakistan to Vietnam (KORMILEV 1990). Six species are presently known in the palaearctic region, recorded from the southern and western provinces of China (PUTSHKOV & PUTSHKOV 1996). In the collection of Ernst Heiss (Innsbruck) a male and a female specimen of *Chelocoris* were found, and belong to a new species, which is described below.

Description of species

All measurements are in millimetres. Ratios are given in units, and 25 units = 1 mm.

Carcinocoris yunnanus nov.sp. (Figs 1-6)

Holotype: ♀, China, W Yunnan 1993, Baoshan env., Lijiang, 5.-8.6., leg. E. Jendek & O. Šausa; deposited in the Natural History Museum Vienna. Paratype: 1♀, same data.

Description: Body: elongate; total length 7.3; maximum width of pronotum 2.4; maximum width of abdomen at segment IV 3.6; ratio of maximum width of abdomen at segment IV to pronotal width 1:1.5. General colouration: light brown.

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[1] Dedicated to Ernst Heiss for his generosity and friendship, on the occasion of his 70th birthday.

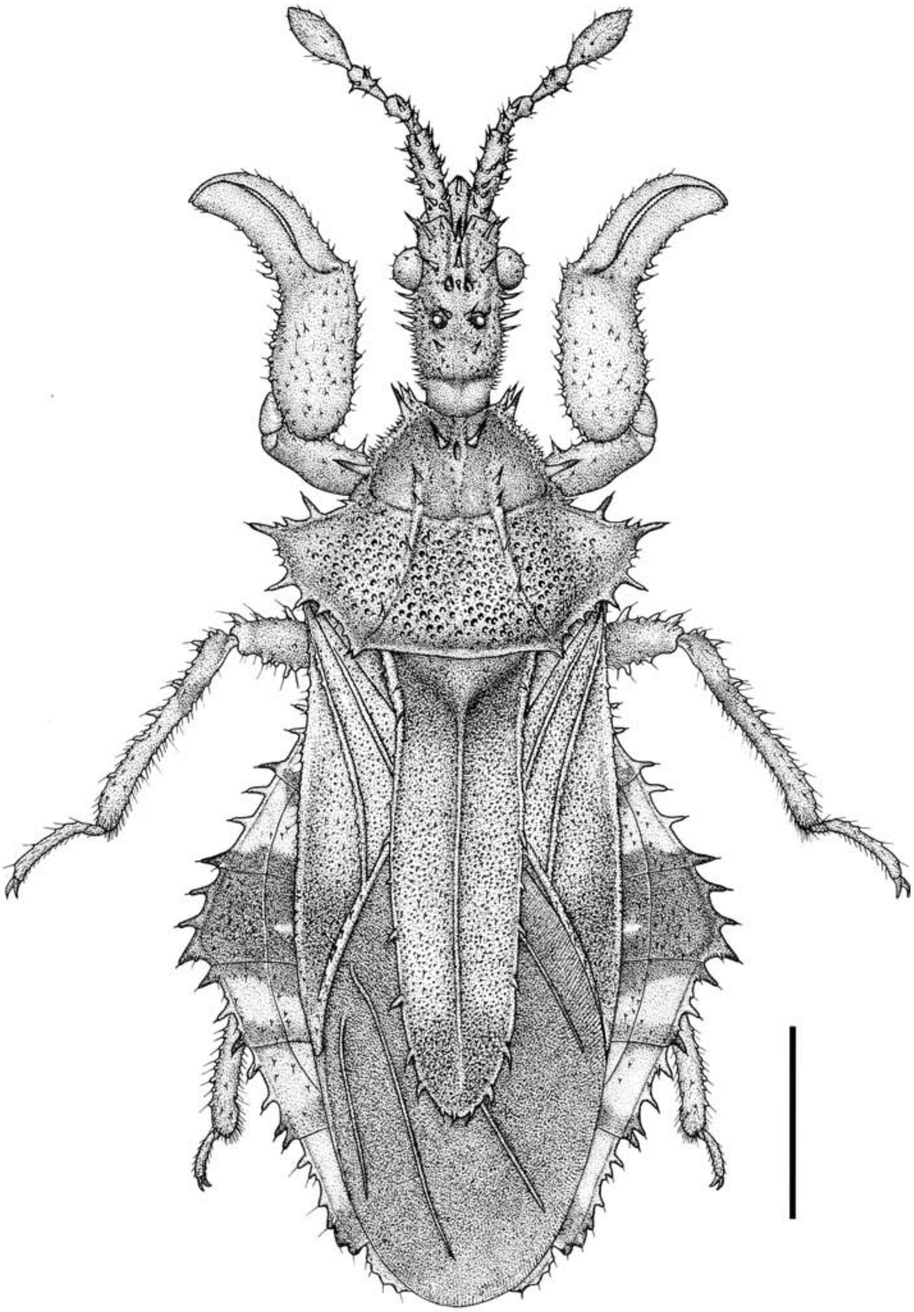


Fig. 1: *Carcinocoris yunnanus* nov.sp., female habitus, dorsal aspect. Scale bar = 0.72 mm.

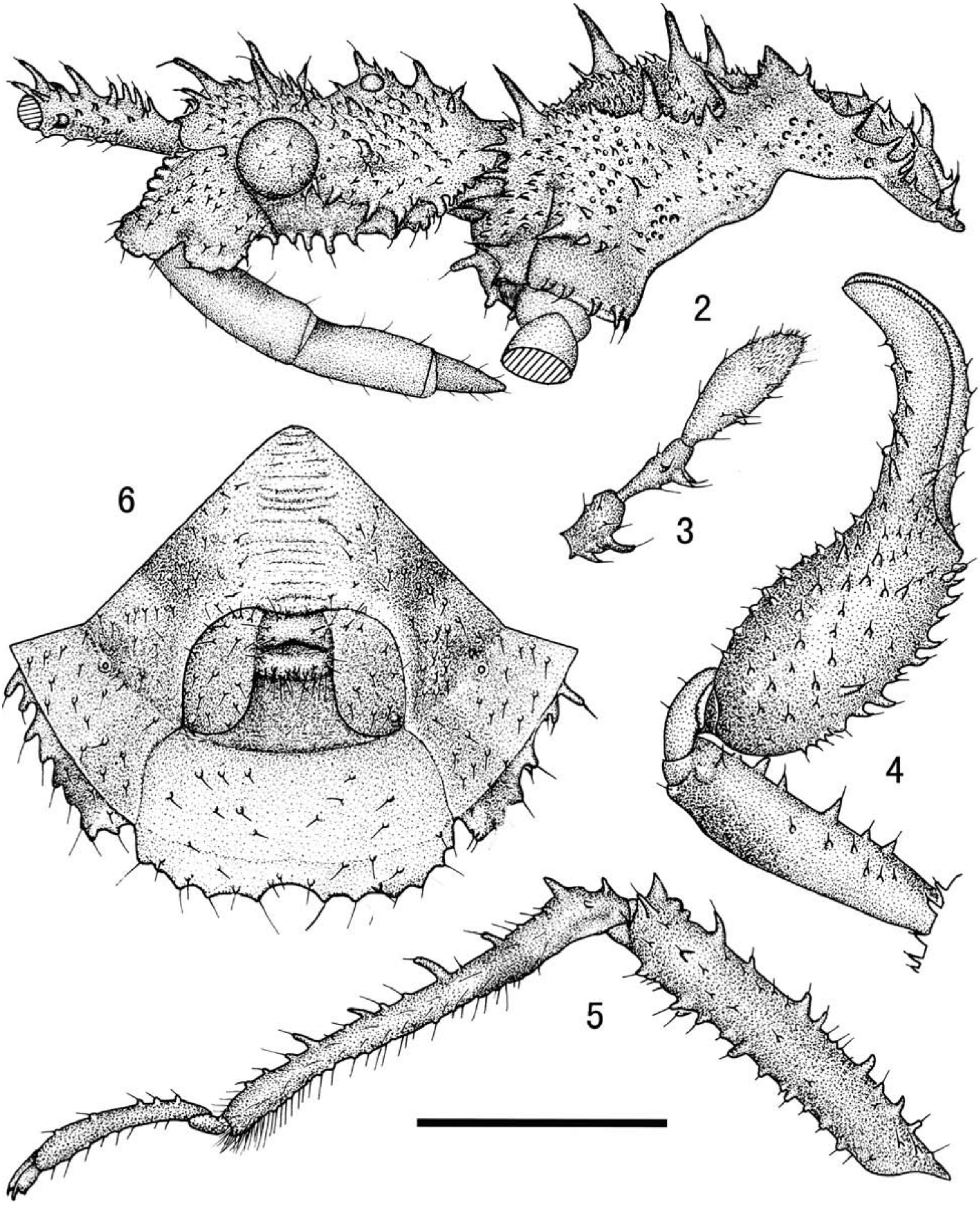
Head: cylindrical; 1.4 times longer than wide through eyes (30:22); preocular part half as long as postocular part (7:16); eyes globose, with setigerous bristles; rostrum reaching prosternum, with scattered silvery hairs; head with setigerous spines of different lengths, long spines darkened apically; three long spines between eyes, one spine anterior to middle spine; ocelli dorsal, situated within first third of postocular region of head, separated from each other by twice their size; two spines between ocelli; genae consisting of two small lobes with few setigerous granules; rostral segment lengths 15:12:5.5, segment I and II mottled light and dark brown, segment III unicolourous dark brown.

Antenna: segment I cylindrical with long (half as long as segment in diameter) and strong setigerous spines, segments II and III conical with long setigerous spines as long as segments in diameter, segment IV fusiform with short setigerous spines; length of segments I and IV equal and twice as long as each segment II and III; relative width:length of segments I (4:14), II (3:7), III (3:8), IV (5:14); unicolorous light brown.

Thorax: Pronotum hexagonal, shorter than wide (42:60); anterior lobe shorter than posterior lobe (18:25); posterior lobe dilated; pronotal carinae straight, diverging posteriorly, well developed from middle of anterior lobe to posterior borders of pronotum, armed with 3-5 irregular strong setigerous spines, decreasing in size posteriorly, two located at the anterior lobe, three at the posterior lobe; in the middle of the anterior lobe two very strong setigerous spines; anterior lobe with strong setigerous spines anterolaterally and laterally slightly behind middle of lobe; posterior lobe with fine, shallow punctures and short setigerous granules; anterolateral borders of pronotum with short setigerous spines and few dispersed strong setigerous spines; all pleura with short, scattered setigerous granules.

Scutellum: tongue-shaped (length:basal wide = 80-90:25); shorter than in C. *castetsi* and reaching abdominal segment VI; sides slightly sinuate; apex moderately pointed; basally triangularly inflated with a few granules, disc with dense, fine, smooth punctures of nearly even size, lateral borders with 14-18 short setigerous spines (approx. 30 spines in C. *castetsi*), disc with scattered small setigerous granules (posterior part densely covered with setigerous spines in C. *castetsi*), median carina well developed, narrow, straight, reaching apex, evanescent at apex, unicolorous brown, apex darkened.

Wings: reaching apex of abdomen, corium shorter than scutellum, reaching end of connexivum V, corial veins forming one large and two smaller cells; veins and area between them with spiculoid granulation,



Figs 2-6: *Carcinocoris yunnanus* nov.sp., female (**2**) Head and prothorax, in lateral view (**3**) antenna (except 1st segment) (**4**) fore leg (**5**) mid leg (**6**) apex of abdomen, in ventral view. Scale bar = 1 mm.

latter with dispersed, fine, smooth punctures; membrane dark brown, venation reduced, veins straight and nearly parallel, reaching edge of membrane.

Legs: coxa I conical, narrow at base, widened at apex, slightly curved, with few short setigerous spines and few spiculoid granules, brown with an interrupted dark brown apical band, trochanter I reaching beyond base of femur I and attached laterally to base of femur I, femur I approximately twice as wide as coxa I, densely covered with short setigerous spines; apical projection of femur I shorter than rest of femur (20:28), apical projection strongly curved, with a few

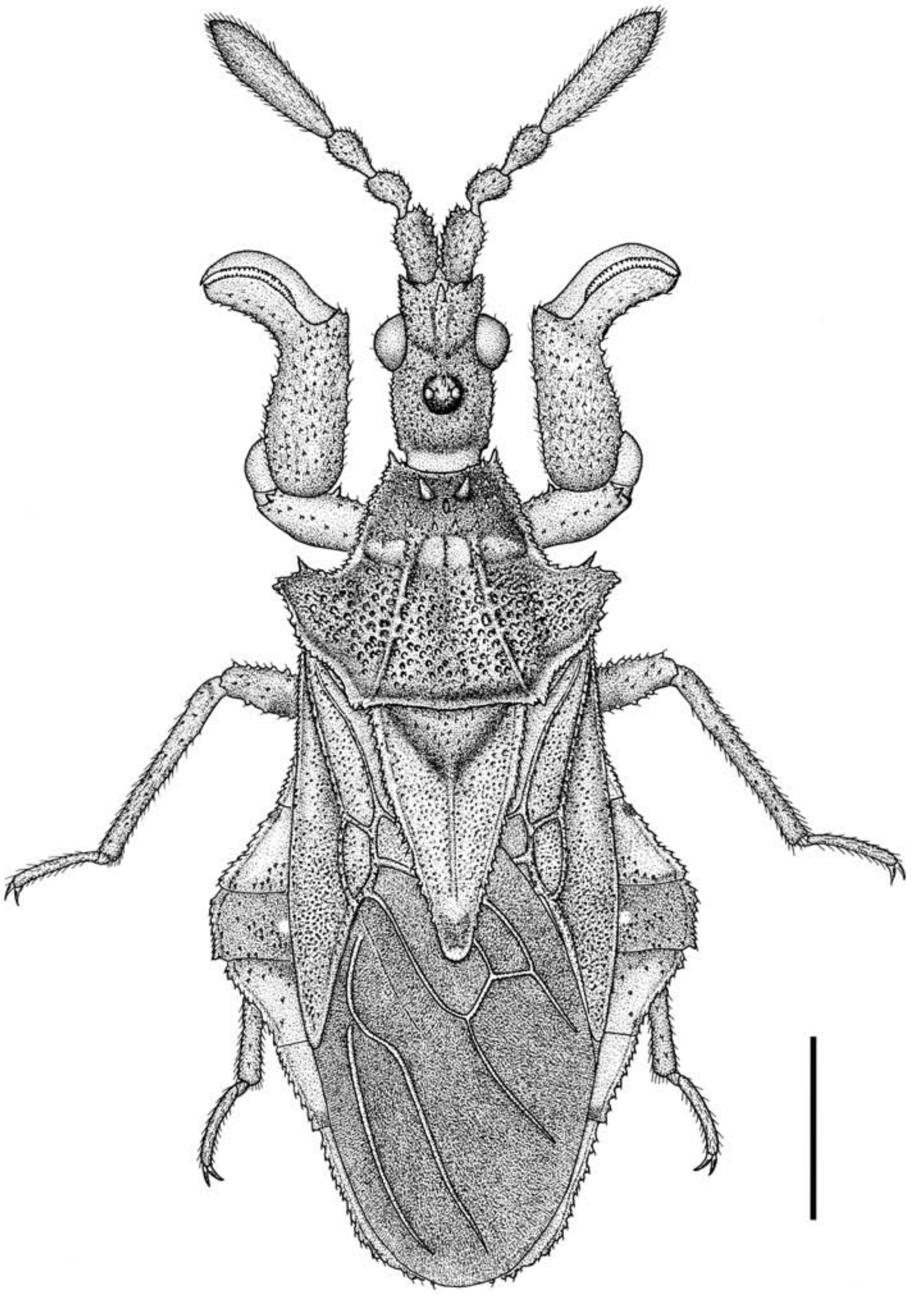


Fig. 7: *Chelocoris heissi* nov.sp., male habitus, dorsal aspect. Scale bar = 1 mm.

short setigerous spines basally and some silver hairs apically; dark denticles on apical two thirds of inner side; tibia I approximately half as wide as apical projection of femur I, with dark denticles; middle and hind legs slender, with setigerous spines and very long silvery setae, 2-segmented tarsi (length 4:16), second tarsal segment curved, with a few long setae.

Abdomen: rhomboid, approximately as wide as long (90:110) [length measured from posterior border of pronotum to apex], apex of abdomen broadly rounded; connexivum armed with short, strong, setigerous spines; spines shorter than exposed area of connexivum, disc of connexiva with scattered spiculoid granulation on segments III-V; connexivum light brown, with dark brown stripe at posterior end of each segment, segment IV completely dark brown, extending to posterior end of segment III and anterior end of segment V; venter mottled light and dark brown with scattered setigerous granulation.

Male: unknown.

Biology: unknown.

Etymology: Named for the type locality, the southwestern Chinese province Yunnan, a hot-spot of ambush bug species diversity.

Diagnosis: *Carcinocoris yunnanus* nov.sp. differs from the similar *C. castetsi* HANDLIRSCH by the shorter scutellum and the reduced number of spines on the connexivum.

Addition to the key of *Carcinocoris* species by FROESCHNER & KORMILEV (1989: 11)

5 Spines on connexival margin paired and furcate . . . . *C. indicus* DUDICH

Spines on connexival margin neither paired nor furcate 6

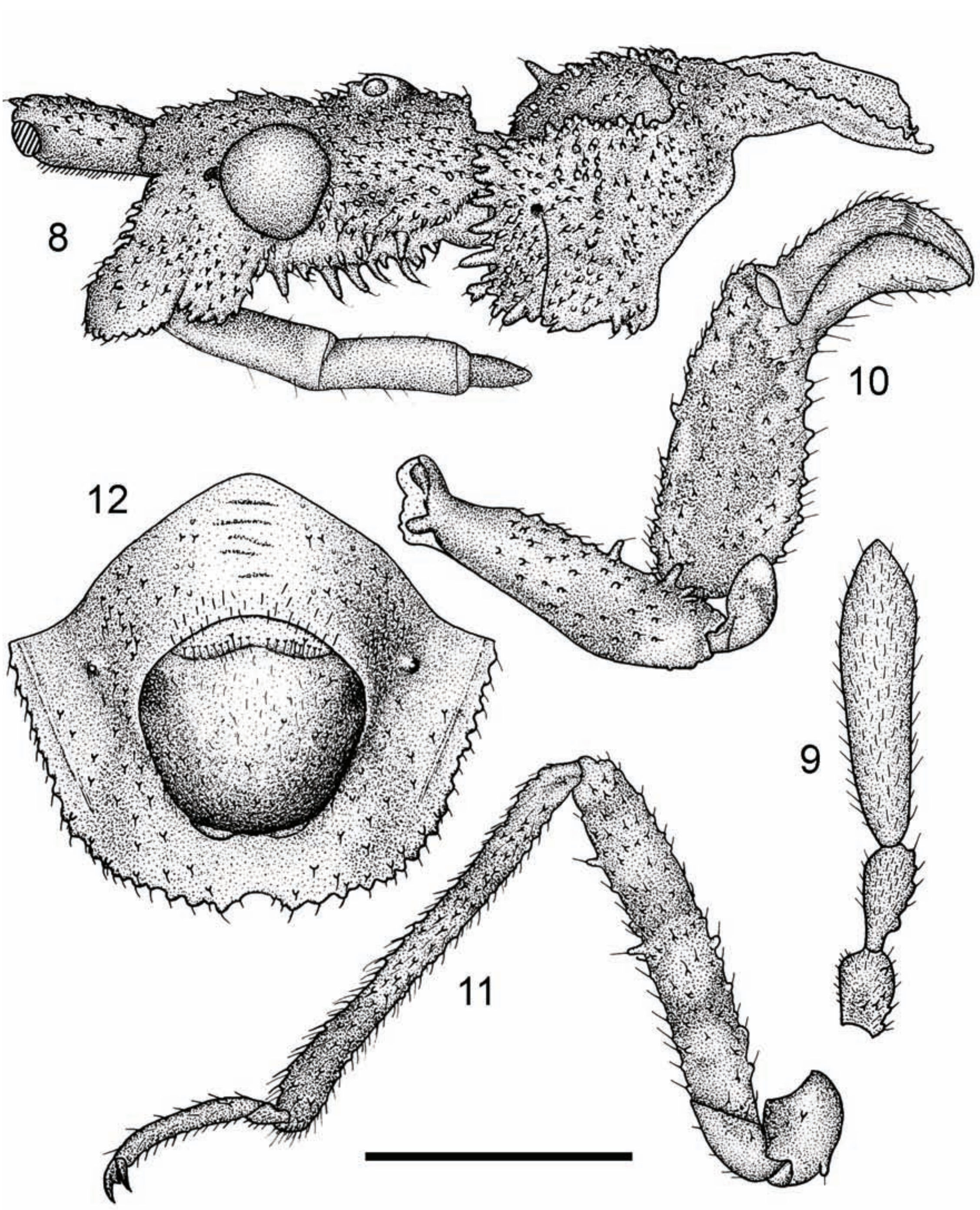
6 Lateral borders of scutellum with approx. 30 short setigerous spines; connexival margin with many spines; scutellum reaching abdominal segment VII . . . . *C. castetsi* HANDLIRSCH

Lateral borders of scutellum with 14-18 short setigerous spines; connexival margin with few spines; scutellum reaching abdominal segment VI . . . . *C. yunnanus* nov.sp.

Chelocoris heissi nov.sp. (Figs 7-16)

Holotype: ♂, China, Yunnan Prov., Daju, Tiger Gorge, Lijiang, 27.21N, 100.19E, 24-28.VI.1992, leg. S. Bečvar; deposited in the collection Ernst Heiss (Innsbruck). Paratype: 1 ♀, same data.

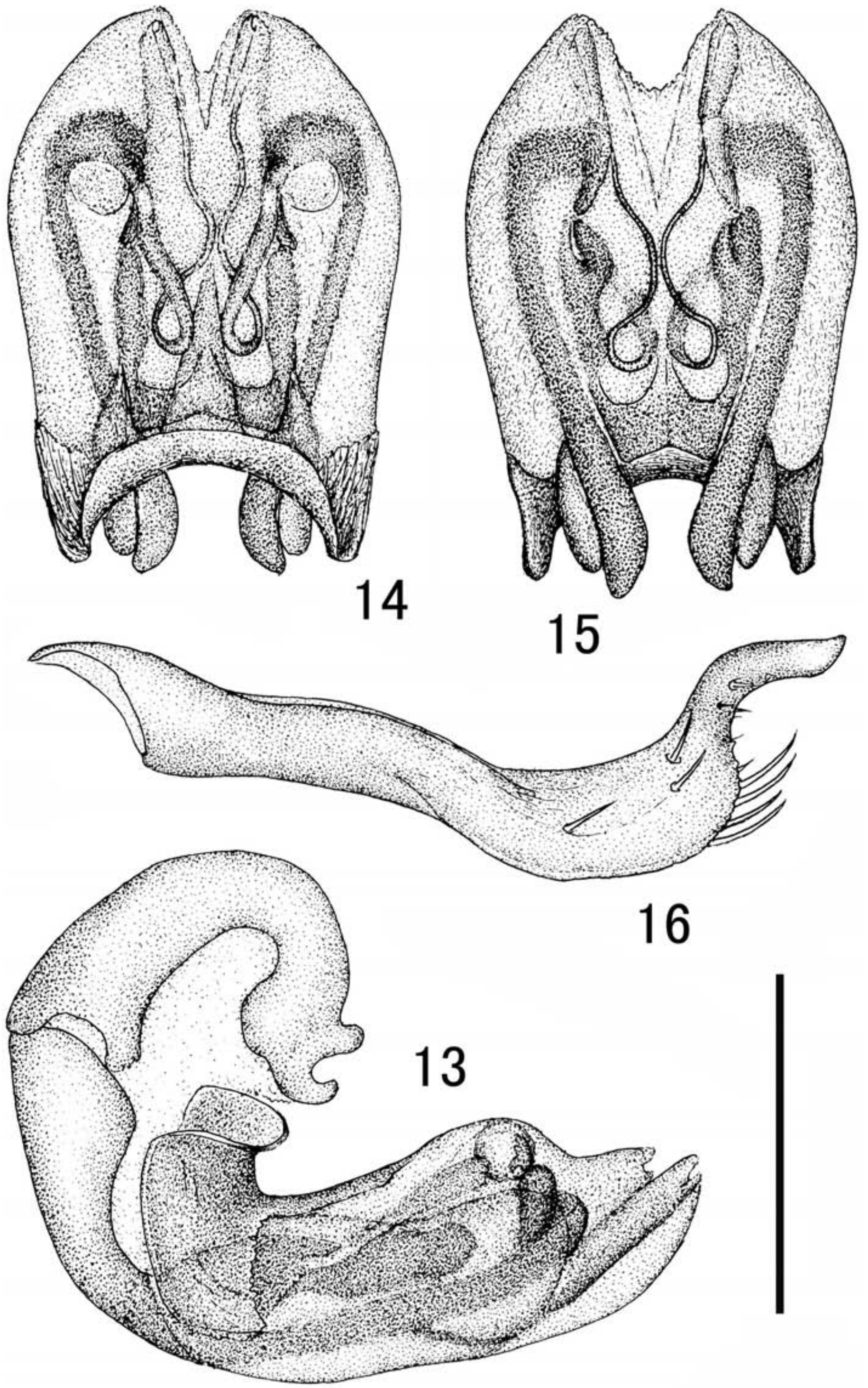
Description: Body: elongate; total length 6.5 (♂), 6.80 (♀); maximum width of pronotum 2.20 (♂), 2.28 (♀); maximum width of abdomen at segment IV (third visible) 3.00 (♂), 3.80 (♀); ratio of maximum width of abdomen at segment IV to prono-



Figs 8-12: *Chelocoris heissi* nov.sp., male (**8**) Head and prothorax, in lateral view (**9**) antenna (except 1st segment) (**10**) fore leg, in ventral view (**11**) mid leg (**12**) apex of abdomen, in ventral view. Scale bar = 1 mm.

tum width 1:0.73 (♂) and 1:0.60 (♀); General coloration: brown, male darker than female.

Head: cylindrical; 1.3 times longer than wide through eyes (28:21); preocular part half as long as postocular part (7:14); covered with dense setigerous granulation; no visible spines between eyes in lateral view (♂), but two small setigerous spines between eyes, these twice as long as usual setigerous granulation on head in lateral view (♀); eyes globose, with erect bristles; rostrum reaching prosternum, ocelli dorsal, situated in middle of postocular head, close to each other, separated by only half their size; tylus short, with one row of setigerous granules, tip of tylus with a single brown erected setigerous spine; genae consisting of two lobes produced forwards and downwards, covered with setigerous granulation; strong, oblique setigerous spines ventrally on each side; rostral segment lengths (12:12:4), segments I and II mottled brown, segment III unicolorous chestnut brown (♂) or light brown (♀).



Figs 13-16: *Chelocoris heissi* nov.sp., male (**13**) Phallus, in lateral view (**14**) phallosoma, in dorsal view (**15**) phallosoma, in ventral view (**16**) clasper. Scale bar for Fig. 13 = 0.43 mm, for Fig. 14, 15 = 0.50 mm, for Fig. 16 = 0.25 mm.

Antenna: segment I cylindrical with dense, short, setigerous spines, segments II and III conical with sparse, short, setigerous spines, segment IV fusiform with short, fine, silvery hairs (♂) or conical with short setigerous spines (♀); relative width:length of segment I 5:11 (♂), 5:10 (♀), segment II 4:8 (♂), 3:5 (♀), segment III 4:9 (♂), 3:6 (♀), segment IV 7:26 (♂), 6:12 (♀); unicolorous light-brown (♂), light-brown to clear brown (♀).

Thorax: Pronotum hexagonal, shorter than wide 38:55 (♂), 38:57 (♀), anterior lobe shorter than posterior lobe (15:22), posterior lobe dilated; pronotal carinae straight, diverging posteriorly, well developed on posterior lobe and reaching almost posterior border of pronotum, clearly visible and without granulation on posterior lobe but extending to posterior part of anterior lobe with granulations; a line of granulations between carinae on posterior part of anterior lobe; in middle of anterior lobe two very strong, divergent, setigerous spines, anterior part of anterior lobe with dispersed setigerous granulation; posterior part of anterior lobe without spines; posterior lobe punctate, smooth, without granules; Pronotum anterolaterally acute (=anterior angle armed with a short, oblique setigerous spine), anterior border slightly sinuate, posterior border straight; lateral borders straight at anterior lobe, to angle of posterior lobe and to posterior angle; sinuate from posterior angle to hind angle; pronotal borders without teeth or spines except for a small, brown, setigerous spine on each side of anterior border of posterior lobe; anterior part of anterior lobe chestnut brown, posterior part honey-coloured (clear brown), posterior lobe light brown (obscure brown); anterior lateral border of the pronotum with strong, oblique setigerous spines; all pleura with short, dense, setigerous granulation.

Scutellum: triangulate, length:basal width 41:25 (♂), 41:27 (♀); reaching end of abdominal segment IV; sides slightly sinuate; apically narrowed, apex round; basally triangularly inflated with few setigerous granules; lateral borders with very short (knoblike) setigerous spines; disc with dense, fine punctures of irregular size; median carina well developed, narrow, straight, starting from inflated area and nearly reaching apex; evanescent at apex; scutellum whitish, triangular, inflated area and stripe near apex chestnut brown.

Wings: reaching apex of abdomen, corium longer than scutellum, reaching end of connexivum V, corial veins forming one large and two smaller cells; corium with dispersed, fine punctures; corium light brown, gradually darkened from exocorium to posterior end of corium; membrane light brown; membranal veins forming two closed cells (M+Cu and Cu+PCu) of equal length; radial vein basally sinuate, impressed vein between R+M.

Legs: coxa I cylindrical with few spiculoid granules, femur I approximately 1.5 times wide as coxa I, densely covered with short setigerous spines; apical projection of femur I half as long as rest of femur (15:30); apical projection of femur I curved, with few short setigerous spines basally and laterally, with a few silver hairs apically, inner side completely set with dark denticles; tibia I basally approximately two-thirds as wide as apical projection of femur I (3:5); narrowed apically, apex with a dark spot (♂); middle and hind legs slender, with short setigerous spines and long silvery setae, 2-segmented tarsi (length 3:12), second tarsal segment curved with a few long setae. coxae I light brown with chestnut coloured ventral stripe, femur I chestnut brown with whitish setigerous granulations, apical projection and tibia I honey-coloured (♂), fore leg unicolorous light brown (♀); middle and hind legs light brown, mottled with chestnut brown spots.

Abdomen: rhomboid, approximately as wide as long in ♀ (95:100), more elliptical in ♂ (75:92); apex of abdomen broadly rounded; lateral borders of connexivum with very short (knoblike) setigerous spines, separated from each other by approximately their size; spiculoid granulation on disc of connexiva scarce and scattered on segments III-V (♂), dense and aggregated on interior border on segments III-VI and on exposed exterior border of nota on segments III-V, a few granules even on anterior border of segment VII (♀); connexivum whitish, except chestnut brown segment IV, chestnut brown spot anterolaterally and stripe at posterior border of segment III; chestnut brown spots laterally at segments V-VII (more pronounced in ♀); venter light brown, shagreened, with almost equally dispersed setigerous granulations.

Biology: unknown.

Etymology: Named in honor of Ernst Heiss (Innsbruck) for his outstanding contributions to our knowledge of Heteroptera, his continous support, and for making available this interesting material from his collection.

Diagnosis: *Chelocoris heissi* nov.sp. belongs to the group of species without spines between the eyes and differs from all other known species of the genus by the elongate scutellum.

Addition to the key of *Chelocoris* species by Froeschner & Kormilev (1989: 12-13)

2 Membrane with two cells, the outer slightly longer than the inner one 3

Membrane with the two cells subequal in length 4

3 Large, over 8 mm in length; anterolateral borders of pronotum with spines; lateral angles of pronotum angular. Length 8.5-9 mm . . . . *Ch. handlirschi* Bianchi

Small, less than 7 mm long; anterolateral borders of pronotum without spines; lateral angles of pronotum truncate, reflexed. Length 6.6 mm . . . *Ch. alatus* Kormilev

4 Large, over 7 mm in length; scutellum reaching abdominal segment III; pronotum anterolaterally acute; anterior lobe of head with 3 distinct spines in a longitudinal row; several small spines on each side of the anterior border of the posterior lobe of the pronotum; length (mm) of antennal segment I: II: III: IV = 0.34: 0.24: 0.26: 1.36 (♂) and 0.36: 0.20: 0.20: 0.80 (♀); length 7.4 (♂) - 8.7 (♀) mm . . . . *Ch. tibeticus* Hsiao & Liu

Small, less than 7 mm long; scutellum reaching abdominal segment IV; pronotum anterolaterally truncate; anterior lobe of head without a distinct spine; a small spine on each side of the anterior border of the posterior lobe of the pronotum; length (mm) of antennal segment I: II: III: IV = 0.44: 0.32: 0.36: 1.04 (♂) and 0.40: 0.20: 0.24: 0.48 (♀); length 6.5 (♂) - 6.8 (♀) mm . . . . *Ch. heissi* nov.sp.

Acknowledgements

We thank E. Heiss (Innsbruck) for placing Phymatinae of his collection at our disposal, H. Zettel (Naturhistorisches Museum, Wien) for providing access and working facilities at the NHMW, D. Burckhardt and D. Wyninger (Naturhistorisches Museum, Basel) for loan of specimens, P. van Doesburg (Leiden) for critical comments on the manuscript and C.W. Schaefer (University of Connecticut, Storrs, CT) for a linguistic review.

Zusammenfassung

Zwei neue Arten der Raubwanzenunterfamilie Phymatinae werden aus Yunnan, China beschrieben. *Carcinocoris yunnanus* nov.sp. gehört zur "*C. castetsi*" Artengruppe mit einem rhombischen Abdomen und kurzen, ungeteilten Dornen am Connexivum. *Carcinocoris yunnanus* nov.sp. unterscheidet sich von *C. castetsi* HANDLIRSCH durch das kürzere Scutellum und die geringere Anzahl der Dornen am Connexivum. *Chelocoris heissi* nov.sp. gehört zur Gruppe von Arten ohne Dornen zwischen den Augen und unterscheidet sich von ähnlichen Arten durch das verlängerte Scutellum.

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